

Development of a Work Control System for Propulsion Testing at Stennis Space Center (SSC)

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In 1996 Stennis Space Center was given management authority for all Propulsion Testing for NASA. Over the next few years several research and development (R&D) test facilities were completed and brought up to full operation in what is known as the E-Complex Test Facility at Stennis Space Center. To construct, activate and operate these test facilities, a manual paper-based work control system was created. After utilizing this paper-based work control systems for approximately three years, it became apparent that the research and development test area needed a better method to execute, monitor, and report on tasks required to further propulsion testing. The paper based system did not provide the engineers adequate visibility into work tasks or the tracking of testing or hardware discrepancies. This system also restricted the engineer's ability to utilize and access past knowledge and experiences given the severe schedule limitations for most R&D propulsion testing projects.

This paper will explain the requirements and steps taken to develop the current Test Operations' electronic work control system. The Work Control System developed includes work authorization documents such as test preparation sheets, discrepancy reports, pre-test briefing reports, and test requests.

In developing this system the goal was to focus on improving communications and collaboration between the various engineers and technicians that support design, construction, activation, and testing of any propulsion test project at Stennis Space Center. This system was initially developed in 1999 and placed into production in October 2000. Today's Work Control system has evolved by incorporating improvements suggested by field technicians, test engineers, designers, safety engineers, and project managers.

The Work Control System development leveraged existing investments in tools and products by expanding them into an integrated collaborative engineering environment. The technical problems are many and varied; the challenge has been to remain innovated and proactive in building this collaborative environment without spending vast sums of money. The path has been incremental and value-oriented. More importantly, it has not forced Propulsion Test Directorate engineering or operations to compromise on the quality of work provided to our customers.